

Notice of Allowability

Application No.

09/683,847

Examiner

Mujtaba K. Chaudry

Applicant(s)

SHIH ET AL.

Art Unit

2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 03/16/2005.
2. ☒ The allowed claim(s) is/are 1, 3 and 5-27.
3. ☒ The drawings filed on 21 February 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date: _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

EXAMINER'S AMENDMENT

An Examiner's amendment to the abstract and claim 12 appear below. In particular, minor corrections have been made. The Examiner attempted to reach the Applicants, but there was no response. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

Please replace the abstract with:

An encoding method for an optical recorder provides an optical recorder with an encoder for encoding data received from a computer. Additionally, the optical recorder includes a processor for controlling operations of the encoder. The encoding method includes receiving data of a next mode, which is different from a current mode, from the computer even when the encoder is still encoding data of the current mode.

Please replace claim 12 with:

12. An encoder coupled to a buffer within an optical storage device for encoding received data for storage on an optical disc, the encoder comprising:

- a host interface for receiving data having a plurality of modes from a computer;
- an encoder sector processor for encoding data according to the plurality of modes;
- an encoder buffer arbiter being coupled to the host interface, the buffer, and the encoder sector processor for storing the data received from the host interface into the buffer, transferring the data in the buffer to the encoder sector processor, and storing the encoded data outputted by the encoder sector processor into the buffer; and

- a trigger register being coupled to the encoder sector processor for generating change mode triggers to indicate that last data stored in the buffer and data following the last data need to be encoded with a next mode.

REASONS FOR ALLOWANCE

Claims 1, 3 and 5-27 are allowed. The following is an Examiner's statement of reasons for allowance:

Independent claim 1 of the present application teaches a encoding method for an optical recorder, the optical recorder including an encoder for encoding data received from a computer for storage on an optical disc, a processor for controlling operations of the encoder, a buffer for storing data transmitted from the computer; wherein the encoder includes a host interface for

receiving data from the computer; an encoder sector processor for encoding data according to modes of the data; an encoder buffer arbiter connected to the host interface, the buffer and the encoder sector processor for storing data from the host interface into the buffer, transferring data in the buffer to the encoder sector processor, and storing data encoded by the encoder sector processor into the buffer; a subcode generator connected to the encoder buffer arbiter for generating sub-channel data; a cross-interleave Reed-Solomon code (CIRC) connected to the encoder buffer arbiter for generating main channel data; a modulator connected to the subcode generator and the CIRC for converting the sub-channel data and the main channel data so as to generate a serial data stream; a writer controller connected to the modulator for converting the serial data stream into switch commands of write strategy; and an absolute time in pre-grove decoder (ATIP decoder) connected to the write controller for providing absolute time information; and the encoding method comprising: receiving data of a next mode which is different from a current mode from the computer even when the encoder is still encoding data of the current mode; storing data received by the encoder from the computer into the buffer using the host interface to receive data from the computer; using the encoder buffer arbiter to store data from the host interface onto the buffer; using the encoder buffer arbiter to transfer data in the buffer to the encoder sector processor; using the encoder sector processor to encode data transmitted from the encoder buffer arbiter according to modes of the data; using the encoder buffer arbiter to overwrite data stored in the buffer with data encoded by the encoder sector processor; using the subcode generator to generate sub-channel data; using the CIRC to interleave data encoded by the encoder sector processor and stored in the buffer so as to generate main channel data; using the modulator to convert the sub-channel data and the main channel

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data so as to generate a serial data stream; using the ATIP decoder to provide absolute time information; and using the write controller to convert the serial data stream into switch commands of write strategy and outputting the switching commands with reference to the absolute time information. The foregoing limitations are not found in the prior arts of record. The prior art of record, namely Honjo, teaches an optical disc apparatus for recording a digital signal on a recording disk in a recording mode and for reproducing the recorded digital signal in a reproduction mode, comprising: a recording signal processor, said processor in a first processing mode, compression-coding and modulating an input signal to obtain n channels of first modulated coded signals having a bit rate $A1$, wherein n is a positive integer at least equal to one, and, in a second processing mode, compression-coding and modulating the input signal to obtain substantially $n \cdot A2/A1$ channels of second modulated coded signals having a bit rate $A2$ which is higher than the bit rate $A1$; a disk driver, said disk driver driving said recording disk to rotate at a specified substantially constant rotating speed or at a specified substantially linear velocity; a mode specifier, said mode specifier controlling said recording signal processor in said recording mode to operate either in said first processing mode or in said second processing mode; an optical recorder and reproducer having $n \cdot A2/A1$ recording/reproducing channels for recording on said recording disk said n channels of first modulated coded signals through n recording/reproducing channels of said $n \cdot A2/A1$ recording/reproducing channels when said recording signal processor is operating in said first processing mode and for recording said $n \cdot A2/A1$ recording/reproducing channels when said recording signal processor is operating in said second processing mode, and for reproducing from said recording disk the recorded n channels of first modulated coded signals through said n recording/reproducing channels to

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obtain n channels of reproduced first modulated coded signals having the bit rate $A1$ when signals to be reproduced are said first modulated coded signals and for reproducing the recorded $n \cdot \text{times} \cdot A2/A1$ channels of second modulated coded signals through said $n \cdot \text{times} \cdot A2/A1$ recording/reproducing channels to obtain substantially $n \cdot \text{times} \cdot A2/A1$ channels of reproduced modulated coded signals having the bit rate $A2$ when the signals to be reproduced are said second modulated coded signals; a reproduced signal processor, said processor in a first processing mode, demodulating and decoding said n channels of reproduced first modulated coded signals to obtain a reproduced digital signal and, in a second processing mode, demodulating and decoding said substantially $n \cdot \text{times} \cdot A2/A1$ channels of reproduced second modulated coded signals; a mode controller, said controller controlling said reproduced signal processing means to operate in said first operating mode when the signals to be reproduced are said first modulated coded signals and to operate in said second mode when the signals to be reproduced are said second modulated coded signals. None of the prior arts of record teach nor fairly suggest all the limitations in the independent claim 1 of the present application. In particular, the limitations of "...receiving data of a next mode which is different from a current mode from the computer even when the encoder is still encoding data of the current mode... and using the encoder buffer arbiter to store data from the host interface onto the buffer; using the encoder buffer arbiter to transfer data in the buffer to the encoder sector processor; using the encoder sector processor to encode data transmitted from the encoder buffer arbiter according to modes of the data; using the encoder buffer arbiter to overwrite data stored in the buffer with data encoded by the encoder sector processor; using the subcode generator to generate sub-channel data; using the CIRC to interleave data encoded by the encoder sector processor and

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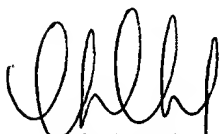
stored in the buffer so as to generate main channel data; using the modulator to convert the sub-channel data and the main channel data so as to generate a serial data stream; using the ATIP decoder to provide absolute time information; and using the write controller to convert the serial data stream into switch commands of write strategy and outputting the switching commands with reference to the absolute time information" are not taught or fairly suggested in the prior arts.

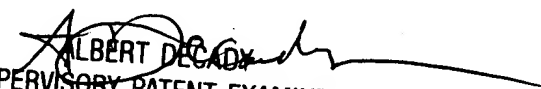
Independent claims 12 and 21 include similar limitations of independent claim 1 and therefore are allowed for similar reasons.

Dependent claims 3, 6-11, 13-20 and 22-27 depend from independent claim 1, 12 and 21 and inherently include limitations therein and therefore are allowed as well.

Any inquiries concerning this communication should be directed to the examiner, Mujtaba Chaudry who may be reached at 571-272-3817. The examiner may normally be reached Mon – Thur 6:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, please contact the examiner's supervisor, Albert DeCady at 571-272-3819.


Mujtaba Chaudry
Art Unit 2133
May 30, 2005


ALBERT DECADY
SUPERVISORY PATENT EXAMINER
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